



*Published to advance the Science of cold-blooded vertebrates*

### NOTE ON SOME GYMNOTID FISHES.

The following species of this family (Gymnotidae) were noticed in the collection of the Academy of Natural Sciences of Philadelphia. As they have not been studied for many years, and several are new records, they are offered as a slight contribution to science.

*Electrophorus electricus* (Linnæus). Demarara, Pebas in Ecuador, and South America.

*Gymnotus carapo* Linnaeus. Surinam; Rio Jacuby, Sao Joao to Rio Negro and Chapada, in Brazil; Peruvian Amazon; Upper Amazons; Pebas and Ambyiacu River, Ecuador.

*Sternopygus macrurus* (Schneider). Surinam; Rio Jacuby, Peruvian Amazon, Ambyiacu River.

*Eigenmannia virescens* (Valenciennes). Rio Jacuby and Sao Joao to Rio Negro and Chapada, Peruvian Amazon, Pebas, Ambyiacu River.

*Eigenmannia troscheli* (Kaup). Peruvian Amazon, Sao Joao.

*Steatogenes elegans* (Steindachner). Upper Amazon (Hauxwell). Apparently not recorded from this region previously.

*Hypopomus brevirostris* (Steindachner). One from Colombia, likely Rio Magdalena, as it was received from R. W. Mitchill.

*Rhamphichthys rostratus* (Linnæus). Peruvian Amazon.

*Sternarchorhamphus macrostoma* (Gunther). Peruvian Amazon.

*Sternachus albifrons* (Linnæus). Peruvian Amazon. A young one from the Ambyiacu River also likely this species.

*Sternarchus bonapartii* Castelnau. Peruvian Amazon.

*Sternarchella balaenops* (Cope). This is only known from the type (*Sternarchus balaenops* Cope, Proc. Amer. Philos. Soc., 1878, p. 682) from the Peruvian Amazon. It is closely related to *Sternarchella schotti* (Steindachner), but differs chiefly in its shorter head and the more swollen protruding mandible.

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## EUROPEAN AND AMERICAN HADDOCK.

In the effort to determine any racial differences, if such exist, between European and American Haddock (*Melanogrammus aeglefinus*), a vertebral count of 25 examples of the latter was recently made at the U. S. Bureau of Fisheries. The comparisons were made with published records of the vertebral count of haddock from Scotland and Iceland (Williamson, 26th Annual Report of the Fishery Board for Scotland). The results as indicated below, show that there is no appreciable difference in the number of vertebrae between fish from the several localities.

Locality	Number of	Average	Range
	Specimens	No. of Vertebrae	
Massachusetts .....	25	54.1	53-55
Scotland .....	33	53.7	52-56
Iceland .....	8	53.9	53-55

Locality	Number of	Number of Vertebrae				
	Specimens	52	53	54	55	56
Massachusetts .....	25	—	4	15	6	—
Scotland .....	33	1	12	17	2	1
Iceland .....	8	—	2	3	3	—

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## THE GESTATION PERIOD IN *THAMNOPHIS BUTLERII* (COPE).

In 1912 the writer (Biol. Bul., XXIV, pp. 18-20) published the results of observations on the breeding habits of *Thamnophis butlerii* (Cope), some of which concerned the length of the period of gestation in southern Michigan. Since the snakes have been observed to breed at various times between April 9 and April 24, and the time of breeding is probably determined largely by the prevailing temperatures during April, and because the young appear in August or early in September (August 7-September 6), it was concluded that "it is very probable that the length of the gestation period is rather exact for the species," the differences in the time of parturition being largely due to differences in the time of breeding. It is to be expected that the period is subject to some variation, since presumably the body temperature of the embryo, like that of the mother, fluctuates with the temperature of the air, and this influences the rate of development.

The records which have been obtained show that the length of the period may vary as much as 40 days. The female which was under observation in 1912, gave birth to young in 144 days, but a female which was fertilized on April 18, 1913, had her young on July 31, or in 104 days, and in the case of one which became pregnant on April 18, 1914, parturition occurred on August 9, or in 113 days.

The factors which cause this variation have not been determined, but that temperature is one is suggested by the fact that the snakes kept in relatively cool places during gestation, had the longest periods. The female which gave birth in 144 days was kept in a cool place in the laboratory and was not exposed to sunlight, while the female with the next shorter period was kept in a warm place and exposed to the sunlight for a short time each day, and the female which had young in 104 days was kept in a glass-covered cage in a warm room where the sunlight fell upon it for several hours each day. Unfortunately, the females which had copulated and were kept as controls, proved to be sterile, and the observations are

very few in number, so that no conclusions as to the cause of the variations in the gestation period have been reached. It is certain, however, that there are variations, and it is planned to investigate the influence of temperature by keeping the pregnant females in constant temperature rooms.

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### LOS ANGELES SNAKES.

The following snakes were observed within one-half day's walk of the city of Los Angeles during the years 1913 and 1914:

- 1.—Kosy Boa, *Lachinura roscofusca*. (Cope)
- 2.—Pacific Bull Snake, *Pituophis catenifer*.  
(Blainville)
- 3.—Boyle's King Snake, *Ophibolus getulus boylii*. (Baird & Girard)
- 4.—Coral King Snake, *Ophibolus zonatus*.  
(Blainville)
- 5.—Red Racer, *Zamenis flagelliformis frenatus*.  
(Stejneger)
- 6.—Blue Racer, *Zamenis constrictor flaviventris*.  
(Say)
- 7.—Striped Racer, *Zamenis laterale*.  
(Hallowell)
- 8.—Western Garter Snake, *Thamnophis parietalis*. (Say)
- 9.—Pacific Garter Snake, or "Water-snake,"  
*Thamnophis hammondi*. (Kennicott)
- 10.—Patch-nosed Snake, *Salvadora grahamiae*.  
(Baird & Girard)
- 11.—Western Ring-neck Snake, *Diadophis amabilis*. (Baird & Girard)
- 12.—\*Rock Snake, *Hypsiglena ochrorhyncha*.  
(Cope)
- 13.—\*Tantilla, *Tantilla eiseni*. (Stejneger)
- 14.—Pacific Rattlesnake, *Crotalus oregonus*.  
(Golbrook)

\*Hitherto unrecorded from this locality.

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